Undergraduate Mentoring in Environmental Biology (UMEB)

Program Solicitation

NSF 02-066

DIRECTORATE FOR BIOLOGICAL SCIENCES
DIVISION OF BIOLOGICAL INFRASTRUCTURE
DIVISION OF ENVIRONMENTAL BIOLOGY
DIVISION OF INTEGRATIVE BIOLOGY AND NEUROSCIENCES
DIVISION OF MOLECULAR AND CELLULAR BIOSCIENCES

FULL PROPOSAL TARGET DATE(S):

October 31 of each year	***Research Mentoring*** **proposals**
June 15 of each year	***Planning Activities*** **supplement requests** **Note: Requests for support of Planning Activities that arrive before June 15 will be considered for funding within that fiscal year. Requests that arrive between June 16 and September 30 will be considered for funding after October 1.**
October 31 of each year	***Travel to Meetings*** **proposals: Two dates in 2002: May 6, 2002 only; October 31 of 2002 and each year thereafter.**

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SUMMARY OF PROGRAM REQUIREMENTS

GENERAL INFORMATION

Program Title: Undergraduate Mentoring in Environmental Biology (UMEB)

Synopsis of Program: This program is designed to enable academic institutions and their partners, as well as professional societies, to enhance access to careers in environmental biology (broadly defined) for undergraduate students, particularly those from underrepresented groups. Three types of project may be supported: (1) Research-Mentoring grants provide support for talented undergraduate students to gain research experience in biological sciences related to the environment within a culturally diverse, research-rich learning environment, while enabling faculty members to become better mentors. (2) Planning Activities for Research-Mentoring projects involving partnerships between or among institutions may be supported through supplements to existing NSF grants. (3) Travel to Meetings of professional societies by undergraduate students may be supported through grants to or on behalf of the professional societies.

All projects should emphasize factors that encourage and enable members of underrepresented groups, as defined in the Program Solicitation, to enter and remain in environmental biology, as broadly defined in the Program Solicitation.

Cognizant Program Officer(s):

- UMEB program officers listed at http://www.nsf.gov/bio/progdes/umeb.htm, e-mail: umeb@nsf.gov.

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.074 --- Biological Sciences
- 47.076 --- Education and Human Resources

ELIGIBILITY INFORMATION

- **Organization Limit:** See Section III of this solicitation.
- **PI Eligibility Limit:** See Section III of this solicitation.
- **Limit on Number of Proposals:** None

AWARD INFORMATION

- **Anticipated Type of Award:** Standard or Continuing Grant; Supplement for Planning Activities
- **Estimated Number of Awards:** See Section IV of this Solicitation
- **Anticipated Funding Amount:** Up to $3,000,000 each year (subject to the availability of funds) will be available for the three types of UMEB activities described in this solicitation.

PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

- **Full Proposals:** Supplemental Preparation Guidelines
    - The program announcement/solicitation contains supplements to the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full program announcement/solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required.
- **Indirect Cost (F&A) Limitations:** For *Research Mentoring*, an administrative allowance (limited to 25% of the participant stipend support and the direct costs of ethics activities) is allowed in lieu of indirect costs (enter at Line I of Form 1030). For *Planning Activities*, no indirect costs or administrative allowances are provided. For *Travel to Meetings*, an administrative allowance (limited to 5% of total direct costs) is allowed in lieu of indirect costs.
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full program announcement/solicitation for further information.

C. Deadline/Target Dates

- **Letters of Intent (*optional*):** None
- **Preliminary Proposals (*optional*):** None
- **Full Proposal Target Date(s):**

October 31 of each year	*Research Mentoring* proposals
June 15 of each year	*Planning Activities* supplement requests Note: Requests for support of Planning Activities that arrive before June 15 will be considered for funding within that fiscal year. Requests that arrive between June 16 and September 30 will be considered for funding after October 1.
October 31 of each year	*Travel to Meetings* proposals: Two dates in 2002: May 6, 2002 only; October 31 of 2002 and each year thereafter.

D. FastLane Requirements

- **FastLane Submission:** Required
- **FastLane Contact(s):**
  - FastLane Help Desk, telephone: 1-800-673-6188, e-mail: fastlane@nsf.gov.
  - BIO FastLane specialists, e-mail: biofl@nsf.gov.

PROPOSAL REVIEW INFORMATION

- **Merit Review Criteria:** National Science Board approved criteria. Additional merit review considerations apply. Please see the full program announcement/solicitation for further information.

AWARD ADMINISTRATION INFORMATION

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Standard NSF reporting requirements apply.

I. INTRODUCTION

The National Science Foundation (NSF) mandate to ensure the vitality of the nation's scientific and engineering enterprise requires a focus on the quality, distribution and effectiveness of the human-resource base in science and engineering, including full utilization of all potentially interested and qualified persons. Because members of certain groups are underrepresented in the science, mathematics, and engineering workforce, the Foundation and its Directorate for Biological Sciences (BIO) support efforts directed toward increasing their numbers as full participants in the scientific mainstream.

In keeping with such efforts, BIO is soliciting proposals for Undergraduate Mentoring in Environmental Biology (UMEB). This program is designed to enable academic institutions and their partners, as well as professional societies, to enhance research participation and access to careers in environmental biology (as broadly defined below) for undergraduate students, particularly those from underrepresented groups. For the purposes of this solicitation, these groups include persons with disabilities and members of those racial and ethnic groups underrepresented in science, mathematics and engineering: Native Americans (American Indians and Alaskan Natives), Blacks (African Americans), Native Pacific Islanders (Polynesians or Micronesians), and Hispanics (Latinos).

Also for the purposes of this solicitation, "environmental biology" is broadly defined to include areas of research focusing on organisms as they evolve, interact with each other, and/or interact with their environment, from perspectives that range from ecosystem to development and physiology to molecular genetics. BIO encourages proposals that include research themes in behavior, ecology, ecosystems, ecological physiology, evolutionary biology, population biology, and/or systematics, as well as proposals in other areas that address themes in animal, plant, or microbial biology with environmental emphases. Projects involving the use of molecular tools, genomics approaches, mathematical modeling, and other integrative approaches to biology related to the environment are also encouraged. The theme of the project should be in areas typically funded by NSF's Directorate for Biological Sciences, although mentors can be from other areas (e.g., biological oceanography, physical anthropology, applied mathematical biology). The proposed research and training activities should not have biomedical goals.

Information about UMEB projects and related topics can be found on the Web site of NSF's Directorate for Biological Sciences at: http://www.nsf.gov/bio/progdes/umeb.htm. This information will be updated by July 31 each year, and prospective applicants are encouraged to consult it before preparing UMEB proposals.

II. PROGRAM DESCRIPTION

A. Research-Mentoring Projects

The intent of this activity is to provide support for talented students to gain research experiences in biological sciences related to the environment and to foster an enriched and culturally diverse research and educational environment. A second intent is to enable faculty members to become better mentors. Proposed projects should involve year-round mentoring and include major emphasis on direct student participation in research. Research activities should encompass the academic year and summer, with individual students continuing in the program for more than one year. Projects should emphasize factors that encourage and enable members of underrepresented groups to enter and remain in environmental biology, as broadly defined above. The Directorate for Biological Sciences (BIO) particularly encourages UMEB proposals involving collaboration between research universities and predominantly undergraduate institutions, including community colleges, with significant enrollment of students from underrepresented groups, and/or a tradition of training such students. (See Planning Activities, below.)

Principal Investigators are encouraged to include international research activities in which several students are accompanied by a mentor, such as research collaboration with international partners at field sites or institutions abroad.

The UMEB Research-Mentoring activity is an extension of, and builds upon, NSF's Research Experiences for Undergraduates (REU) program (NSF 01-121). UMEB differs from REU in its focus on biology related to the environment, in expecting each student to continue in a year-round UMEB project for more than one year, and in emphasizing more strongly the mentoring of members of groups that are underrepresented in science and engineering.

In order to complement UMEB projects, Principal Investigators are encouraged to consider other NSF activities with objectives similar to those of UMEB, including activities in the Directorate for Education and Human Resources. BIO encourages the submission of requests for Research Opportunity Awards (ROA, described in Research in Undergraduate Institutions, NSF 00-144) by Principal Investigators with current research awards who seek to bring a scientist from a predominantly undergraduate institution, including minority-serving institutions that are predominantly undergraduate, to work on a funded project. Information on NSF activities with objectives similar to those of UMEB can be found by conducting a search of publications on the NSF Web site at: http://www.nsf.gov/cgi-bin/pubsys/browser/odbrowse.pl.

B. Planning Activities

In order to facilitate the development of partnerships between or among institutions for the purpose of submitting collaborative UMEB Research-Mentoring proposals, support may be provided for planning activities associated with forming such a partnership.

The planning activities must include meetings held at each of the participating institutions, with involvement of both faculty and administrators. The planning activities should address how to integrate the project across the institutions, identifying the strengths and contributions that each institution will bring to the UMEB partnership. The key aim of the planning activities should be to find areas of mutual interest that maximize the ability of faculty at the different institutions to mentor undergraduates in environmental biology research. Planning should explore how to minimize any burden placed on UMEB activities by the distance between institutions, as well as by any differences between the institutions in curricula, in research-mentoring capacity during the academic year, and in instrumentation. Planning also should identify any resources needed (from UMEB and other sources, such as ROA, the Course, Curriculum and Laboratory Improvement program, various infrastructure programs) to enable research and mentoring at all institutions in the partnership.

C. Travel to Meetings

Up to four 4-year continuing or standard awards will be made each year to enable scientific or professional societies to increase or enhance the participation of undergraduates from underrepresented groups in national or regional scientific meetings. The organizers of this activity, on behalf of the society, should arrange mentoring that helps to orient each student to the meeting, introduces him or her to colleagues, and encourages presentation of poster or platform papers and participation in group activities, such as sessions on graduate study and careers, discipline-oriented field trips, and social events.

Who should submit? The proposal may be submitted by the society itself, or by a member or officer of the society on its behalf. When the proposal is not submitted by the society, in order to demonstrate multi-year continuity and commitment to the activity, the proposal should include a supplemental letter of endorsement from the society's governing body. When the proposal does not come from the society itself, the project description should explain how the PI will work with the society to ensure responsible management of the project, and which officer of the society will serve as liaison for the project.

Joint meetings. If a professional society regularly or occasionally meets with another society, each society may apply for an award, but the management plan of each proposal should explain how the activities of the two societies will be coordinated to reduce duplication and competition for students. Each society is expected independently to support the proposed number of students.

III. ELIGIBILITY INFORMATION

A. Research Mentoring

The Undergraduate Mentoring in Environmental Biology (UMEB) program will consider proposals from any institution (or set of collaborating institutions) that has (have):

- at least two currently funded or recently expired (having expired no earlier than two years before the UMEB submission date) multi-year research awards (excluding Small Grants for Exploratory Research, equipment, facilities, travel, symposium, workshop, and planning grants, supplements or fellowships) from NSF in biological sciences related to the environment, as defined in Section I. REU-Site awards, Collections awards from all BIO divisions, as well as training grants such as RTG and IGERT, in biology related to the environment can also count towards eligibility; and

- a third active or recently expired (having expired no earlier than two years before the UMEB submission date), externally funded multi-year research award in biological sciences related to the environment, from any federal, state, regional or local agency, nongovernmental organization, or private source.

NOTE: At least one PI from each of the three awards that confer eligibility must be involved in the proposed UMEB project, at least as a mentor.

Institutions submitting collaborative proposals must have, collectively, a total of at least three eligible awards.

B. Planning Activities

Support will be provided only for planning activities associated with forming a partnership between two or more institutions planning to submit a UMEB Research-Mentoring proposal. The institutions as a group should be eligible to apply for a UMEB Research-Mentoring award when the proposal for support of planning activities is submitted.

C. Travel to Meetings

A proposal may be submitted by or on behalf of any scientific or professional society whose content area falls within the broad definition of environmental biology given in Section I of this program solicitation, and that has regular annual meetings within the U.S.

IV. AWARD INFORMATION

Up to $3,000,000 will be available each year (subject to the availability of funds) for the three types of UMEB activities described in this solicitation.

A. Research Mentoring

Under this solicitation, new or renewal proposals may be submitted for funding amounts up to a total of $500,000 over 5 years, with up to $4,000 per year in additional funds requested for ethics activities. The program expects to make at least five standard or continuing 5-year awards each year, depending upon the quality of submissions and the availability of funds. Anticipated date of award is ten months from proposal submission.

B. Planning Activities

Under this solicitation, requests may be submitted for funding amounts up to a total of $5,000. The program expects to make up to five awards per year, usually as supplements to existing NSF research grants, depending upon the quality of submissions and the availability of funds.

C. Travel to Meetings

Under this solicitation, proposals may be submitted for funding amounts up to $15,000 per year for 4 years. The program expects to make up to four standard or continuing 4-year awards each year, depending upon the quality of submissions and the availability of funds.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal:

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Web Site at: http://www.nsf.gov/cgi-bin/getpub?gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

Research Mentoring:

The following seven items specific to UMEB are supplements to the standard GPG guidelines. All proposal sections listed in GPG are required even though not listed here.

1. Cover Sheet
Select Program Solicitation NSF 02-066 (UMEB) from the pull-down menu in FastLane. For NSF organizational unit, select the most appropriate BIO Division(s) and Program(s). Begin the title of the proposal with "UMEB: . . . ." The first-listed Principal Investigator (PI) is designated as the primary PI and is responsible for coordinating the entire proposed project.

2. BIO Proposal Classification Form (PCF)
Complete the BIO PCF, available on the NSF FastLane system. The PCF is an on-line coding system that allows the Principal Investigator to characterize his/her project when submitting proposals to the Directorate for Biological Sciences. Once a PI begins preparation of his/her proposal in the NSF FastLane system and selects a division within the Directorate for Biological Sciences as the organizational unit to review the proposal and saves the cover sheet, the PCF will be generated and available on the Form Preparation screen. Additional information about the BIO PCF is available in FastLane at http://www.fastlane.nsf.gov/a1/BioInstr.htm.

3. Project Description (maximum 15 pages) must describe:

(*a*) A theme that integrates the proposed research, mentoring, and educational activities (not more than 5 pages). The theme

· may be integrative across a range of disciplines in biological sciences related to the environment or may be tightly focused in one such discipline;

· should be amplified with the names and brief descriptions of prospective mentors' current research projects (funded or unfunded) that are appropriate for undergraduate participation and relevant to the UMEB proposal;

· can be further amplified by describing potential linkages or partnerships among participating organizations (e.g., academic institutions, federal or state laboratories, private foundations), including student research opportunities, as well as logistical arrangements for coordination.

(*b*) A detailed plan for student activities.

· Include specific activities focusing on the undergraduate research experience. Examples of such activities include common courses on conducting research, research projects, rotations through several research laboratories, field trips, weekly journal clubs, and participation in local, regional, or national meetings.

· Include specific activities focusing on career exploration. Examples of such activities include career fairs, GRE preparation, and seminars by professionals in a variety of career roles.

(*c*) A detailed plan for building a research-rich, culturally-diverse community of biologists.

· Describe plans for specific mentoring arrangements (e.g., networks that can include faculty, community partners, graduate students, campus advisors, and/or UMEB peers, training in mentoring skills and/or in cultural awareness). Include references to literature on pedagogy, including effective mentoring.

· Describe efforts to recruit minority students to the program or campus, e.g., via links to high schools or community colleges with programs that encourage minority students to pursue careers in science, mathematics, or engineering.

· Describe evidence of institutional commitment to increasing participation of groups that are underrepresented in science and potential mechanisms for continuing the project activities beyond the NSF funding period.

· Describe other support (federal or non-federal) for the UMEB project or for related activities.

(*d*) A detailed plan for administration and management.

· Describe proposed methods for communicating, coordinating, and managing activities within the project. If the project involves collaboration between institutions, include plans for inter-institutional coordination and for year-round mentoring for all students.

· Describe proposed administrative infrastructure (e.g., graduate-student coordinator, logistical support from a work/study office, mechanisms for undergraduate advising or study-skills enhancement).

· Include a timetable of proposed activities for the entire duration of the project.

(*e*) A detailed plan for assessment and dissemination of information.

· Include assessment plans for evaluating the effectiveness of the program, including such matters as: measures to be employed to gauge project success; mechanisms for assessment of the project by participants and faculty and administrative observers; follow-through procedures to promote continuation of student interest and involvement in research; plans for tracking participants after they complete the project research experience; etc. Annual progress reports are required through the NSF project-reporting system in FastLane. The progress report calls for information on project participants, on the research training provided and other educational activities, on publications and products, and, most important, on contributions to education and human-resource development. Data for the progress report should feed into the project evaluation plan, which in turn should enable informed statements about contributions and success in meeting project goals.

· Describe how information about the project is to be disseminated. Include attendance of at least two faculty members at UMEB-related workshops to be held each year at NSF or at national scientific meetings.

(*f*) A list of at least three currently funded or recently expired multi-year research awards in environmental biology, as described in the "Eligibility" section of this Program Solicitation.

4. Results from Prior NSF Support

Proposals for renewal of UMEB support must include a section (limited in length to 5 pages) entitled "Results from Prior UMEB Support" within the 15-page narrative description of the project. This section must describe the earlier UMEB project(s) and outcome(s) in sufficient detail to permit reviewers to reach an informed conclusion regarding the value of the results achieved. This will likely include results from the project evaluation; summary information on recruiting efforts and number of applicants, demographic make-up and current status of participants; and a list of publications or reports (if to be submitted for publication) resulting from the NSF award.

All UMEB proposals should provide information required by NSF about Results from Prior NSF Support. For Research-Mentoring proposals, such information is limited to one page per PI and is not part of the 15-page limitation of the Project Description. Include the Results from Prior NSF Support in the Supplementary Documentation section of FastLane. (For renewals, this information should not cover prior UMEB support.)

5. Budget

Proposers should provide a detailed yearly budget for each year of the proposed project, as described in the current issuance of the Grant Proposal Guide (GPG). FastLane will generate a cumulative budget. A budget justification is required and must not exceed a total of 3 pages. In the budget justification, explain and justify major cost items and any unusual situations/inclusions. A general description of allowable budget items is included in GPG, Section II.D.7. Include in the proposed budget travel funds for two faculty members to attend a UMEB-related workshop during each year of the project.

As a guide to budget development, student stipends for summer projects are expected to be at least $3,000 per summer, with academic-year stipends comparable on a pro-rata basis. In addition to stipend costs, costs of student housing, student summer health insurance, and student travel to field sites are appropriate budget items. All student costs should be entered at Lines F1 through F4 of NSF Form 1030. It is expected that by far the greatest part of the budget will be allocated for student stipends (Line F1). Examples of other allowable costs include travel to professional meetings for students (Line F2) and for faculty when accompanied by students (Line E); up to $3,000 per student per year for research supplies; part-time support for a coordinator (e.g., a graduate student or advanced undergraduate) for logistical support, not as a substitute for faculty mentors; modest management costs (e.g., for recruitment, assessment, dissemination, mentor training), and field-station fees (Line F4). Modest scientific equipment requests that are directly related to student research projects will also be considered.

Special Note: A grantee may pay stipends as either scholarships or wages as it determines appropriate. In either case, money received by individuals may be taxable income under the Internal Revenue Code of 1986 and may also be subject to state or local taxes. Grantees should provide participants with information on any applicable federal, state or local taxes. Questions regarding applicable federal taxes should be directed to the IRS.

6. Special Information and Supplementary Documentation

This section of the proposal should include Results from Prior NSF Support, if applicable (other than UMEB support, for which results should be included in the Project Description of a renewal proposal), as well as applicable certifications involving research with vertebrate animals, human subjects, recombinant DNA, or endangered species. In addition, the following two items may be provided.

Optional Ethics Component (limit, 3 pages). Project directors may apply for support of ethics-in-science activities in a UMEB project. Ethics activities should focus on issues relevant to the scientific content of the project and emphasize active student (and, where possible, faculty) involvement in teaching and learning ethical concepts that bear on the issues and skills for their resolution. They may include individual student and faculty research projects, special seminars and symposia or courses, team projects, panel presentations and reports, etc. This section should describe the relevant qualifications of the ethics faculty, expected results of the ethics activities, a plan to evaluate how well the goals are achieved, and results from any prior support for an ethics activity.

Project directors may apply for up to $4,000 each year in support of ethics activities in a UMEB project; these funds are not included in the overall maximum total costs of $100,000 per year. Up to 25% of the direct costs requested for this component may be budgeted as an administrative allowance, but the yearly total requested for ethics activities may not exceed $4,000. A separate budget sheet is not possible in FastLane. Thus, the ethics budget is added into the yearly UMEB budget (NSF Form 1030), but must be itemized in the budget justification, with a total shown for the items plus administrative allowance.

Letters of Commitment. Signed letters of commitment documenting collaborative arrangements of significance to the proposal should be scanned and placed in this section. Letters may be relevant where the awardee and performing organizations are different, where faculty or facilities of more than one institution are to be employed, or where international activities are arranged. Letters of endorsement are not permitted.

7. Conflicts of Interests

A conflict-of-interests statement should be submitted using the "Additional Single-Copy Documents" option of the FastLane Proposal Preparation module. Include a table, in the format shown below, that lists the names of people with conflicts of interests for all senior personnel (PI, Co-PIs, and mentors) and any named personnel for whom salary is requested in the project budget. Conflicts to be identified are (1) Ph.D. thesis advisor or advisee, (2) postdoctoral advisor or advisee within the past 48 months, (3) collaborators or co-authors within the past 48 months, and (4) any other individual or institution with which the person has financial ties.

Organize the information as shown in the table below. List full names in alphabetical order of surnames.

Surname	**Given Name & Initial(s)**	**Institution**	**Conflict Type**
Anyone	Janet L.	Red College	Ph.D. advisor of PI (Name)
Person	Alison A.	White University	Collaborator of Mentor (Name)
Someone	J. Raoul	Blue Institute	Financial ties with Co-PI (Name)

Planning Activities:

In almost all cases, a request for support of planning activities should be submitted as a request for a supplement to one of the existing awards that qualifies the institutions to apply to UMEB. In the rare case in which such a supplement request is not possible, please contact one of the cognizant program officers for information on submission. A request for such support should describe the nature of the proposed planning activities, the need for them, the expected participants (faculty members and administrators), and the structure of the proposed UMEB Research-Mentoring project that is expected to result. This description should not exceed 8 pages in length. In addition, biographical sketches should be provided for the major participants in the proposed planning activities (at least one per institution).

Travel to Meetings:

The Project Description (maximum 8 pages) should describe:

1. The nature of activities planned for the students at the meeting, (e.g., undergraduate research poster session or oral paper session, session on graduate school and other career options, graduate-school recruitment session, discipline-related field trip). The proposal should also describe the need for these activities and how such activities will meet the UMEB objectives. Note: Although social activities may be planned, NSF funds cannot be used for support of social activities or entertainment.

2. Arrangements for mentoring students at meeting (e.g., regular lunches with mentors [who might be faculty, post-docs, graduate students or undergraduates who have attended in past years], mentors accompanying students to paper session).

3. How the society will publicize the availability of these travel funds to prospective participants (and/or their faculty research advisors) and so recruit students to the meeting.

4. How the society will recruit and assign individuals to serve as mentors at the meeting.

5. Evidence that the society can identify enough students from groups underrepresented in science who would be interested in attending the meeting. Evidence can take the form of a list of names of current or past undergraduates who could attend or would have attended the meeting, or a list of the society's members at institutions with large populations of such students.

6. Any off-site activities to be undertaken for group as a whole - e.g., pre-meeting e-mail guidelines for preparing CVs, a virtual meeting or e-mail networking before and/or after the meeting.

7. Criteria to use in selecting students - e.g., likelihood of positive impact on student's career development, quality of student essay on research interest and career plans, availability of other support for attending meeting, year in school, letter of support from mentor. Note: As a group, the students supported should increase participation by groups underrepresented in science. Most of the students supported should be scheduled to present research plans or results at the meeting, but up to 25% of the students may be at earlier stages of their academic careers and thus not yet have had substantial research experience.

8. Plans for assessment of activity from year to year, and plans for using this information in an adaptive management plan.

9. Any related activities undertaken by the society.

10. Any planned support by the society during the 4 years of NSF support (e.g., reduced registration fees, membership or journal subscriptions for students), and any anticipated support from the society or other sources for continuing the activity after the 4 years of NSF support.

11. How the society will maintain continuity of this activity over the 4-year duration of the NSF award, including which officer of the society will be responsible.

Budget: The budget may include up to $1,000 of participant support per undergraduate student for transportation, registration, and per diem costs, with 8 to 14 students to be supported each year. Per diem costs will be limited to the days of attendance at the meeting plus the actual travel time to and from the meeting location. When meals and/or lodging are furnished without charge or at a nominal cost, such as part of the registration fee, an appropriate deduction must be made from the authorized per diem cost. Partial support of a student's expenses is allowable, particularly if the student has other non-personal sources of travel support. Also allowable are expenses related to publicizing the activities, e.g., supplies, badges, notices, signs, postage. Maximum award size is $15,000 per year, $60,000 total. As is the case with other NSF support for conferences, workshops and symposia, participant-support costs must be excluded from the indirect-cost base; however, an administrative allowance of up to 5% of direct costs may be requested in lieu of indirect costs.

Note: These funds should not be used to support the travel of students already supported by a UMEB Research-Mentoring project. Such travel costs should be borne by individual UMEB programs. Support for student participation in scientific and professional meetings will increase the number of possible venues in which UMEB Research-Mentoring students can present the results of their research.

Proposers are reminded to identify the program solicitation number (NSF 02-066) in the program announcement/solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

Cost sharing is not required in proposals submitted under this Program Solicitation.

Indirect Cost (F&A) Limitations: For *Research Mentoring*, an administrative allowance (limited to 25% of the participant stipend support and the direct costs of ethics activities) is allowed in lieu of indirect costs (enter at Line I of Form 1030). For *Planning Activities*, no indirect costs or administrative allowances are provided. For *Travel to Meetings*, an administrative allowance (limited to 5% of total direct costs) is allowed in lieu of indirect costs.

Other Budgetary Limitations: For *Research Mentoring*, budget requests should not exceed $100,000 total costs per year, except for up to $4,000 per year in additional funds that may be requested for ethics activities (for details, see subsection 6 under *Research Mentoring* in Section V.A of this solicitation). For *Planning Activities*, budget requests should not exceed $5,000. For *Travel to Meetings*, budget requests should not exceed $15,000 total costs per year.

C. Deadline/Target Dates

Proposals must be submitted by the following date(s):

Full Proposals:

October 31 of each year	*Research Mentoring* proposals
June 15 of each year	*Planning Activities* supplement requests Note: Requests for support of Planning Activities that arrive before June 15 will be considered for funding within that fiscal year. Requests that arrive between June 16 and September 30 will be considered for funding after October 1.
October 31 of each year	*Travel to Meetings* proposals: Two dates in 2002: May 6, 2002 only; October 31 of 2002 and each year thereafter.

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this Program Solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: http://www.fastlane.nsf.gov/a1/newstan.htm. For FastLane user support, call 1-800-673-6188 or e-mail fastlane@nsf.gov.

Submission of Electronically Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required certifications within five working days following the electronic submission of the proposal. Further instructions regarding this process are available on the FastLane website at: http://www.fastlane.nsf.gov.

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

The two merit review criteria are listed below. The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which he/she is qualified to make judgements.

What is the intellectual merit of the proposed activity?
How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?
How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

NSF staff will give careful consideration to the following in making funding decisions:

Integration of Research and Education
One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities
Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

Additional Review Criteria

Research Mentoring

The following additional criteria will receive emphasis in the evaluation of UMEB Research-Mentoring proposals:
1. Impact upon participating students, particularly upon students from groups typically underrepresented in science.
2. Cohesiveness of the educational, mentoring, and research components within the project theme.
3. Extent to which the project enriches the research environment in environmental biology at the participating institution(s).
4. Extent to which the project builds partnerships and networks that contribute to program goals.
5. Adequacy of plans for project management, monitoring, evaluation, assessment, and dissemination.
6. Cost-effectiveness of the project.
7. Institutional commitment to UMEB goals, which can include efforts to increase participation of underrepresented groups, and potential to sustain and institutionalize project activities beyond the NSF grant period.
Award decisions may also consider the distribution of awards by subdiscipline and total funds available to the institution(s) for comparable efforts.

Planning Activities **and** *Travel to Meetings*

Except for Criteria 2 and 3, the additional criteria listed above will be used also in evaluating proposals for Planning Activities and Travel to Meetings.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the identities of reviewers, are sent to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals for Research Mentoring awards submitted in response to this solicitation will be reviewed by Mail Review followed by Panel Review. Requests for supplements to support Planning Activities will be reviewed only by NSF staff, as will proposals submitted in Spring 2002 for Travel to Meetings. Thereafter, proposals for Travel to Meetings will be reviewed by Mail and Panel Review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the closing date of an announcement/solicitation or the date of proposal receipt (whichever is later). The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at one's own risk.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See section VI.A. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1)* or Federal Demonstration Partnership (FDP) Terms and Conditions;* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards also are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

*These documents may be accessed electronically on NSF's Web site at http://www.nsf.gov/home/grants/grants_gac.htm. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Web site at http://www.nsf.gov/cgi-bin/getpub?gpm. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Web site at http://www.gpo.gov.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented an electronic project reporting system, available through FastLane. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, publications, and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding Undergraduate Mentoring in Environmental Biology should be made to:

- UMEB program officers listed at http://www.nsf.gov/bio/progdes/umeb.htm, e-mail: umeb@nsf.gov.

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188, e-mail: fastlane@nsf.gov.
- BIO FastLane specialists, e-mail: biofl@nsf.gov.

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at http://www.nsf.gov/cgi-bin/getpub?gp. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF E-Bulletin, which is updated daily on the NSF web site at http://www.nsf.gov/home/ebulletin, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's Custom News Service (http://www.nsf.gov/home/cns/start.htm) to be notified of new funding opportunities that become available.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF (unless otherwise specified in the eligibility requirements for a particular program).

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the program announcement/solicitation for further information.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090, FIRS at 1-800-877-8339.

The National Science Foundation is committed to making all of the information we publish easy to understand. If you have a suggestion about how to improve the clarity of this document or other NSF-published materials, please contact us at plainlanguage@nsf.gov.

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

Pursuant to 5 CFR 1320.5(b), an agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Division of Administrative Services, National Science Foundation, Arlington, VA 22230, or to Office of Information and Regulatory Affairs of OMB, Attention: Desk Officer for National Science Foundation (3145-0058), 725 17th Street, N.W. Room 10235, Washington, D.C. 20503.

OMB control number: 3145-0058.